Rodney Hornstein

Interviewed by

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By Zoom

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Archives of IT

Welcome to the Archives of Information Technology where we capture the past and inspire the future. It is 4ᵗʰ September 2023. I'm Richard Sharpe and I was in and covering and researching and writing about the IT industry, beginning in the computing side, from the early 1970s. Way before me though, in fact born eight years before me, and making his contribution today, is Rodney Maxwell Hornstein. And Rodney, you were born in 1940, in the summer of 1940, the Battle of Britain was not yet over. It was the year, however, when Turing and others built the first bombe at Bletchley Park, which I have recently seen, a magnificent device. Do you have any memories of the war?

I do. My family were evacuated to High Wycombe. In fact one of my sadnesses, if you like, I'm not a true Cockney, I would have been except my mother was evacuated to Hertfordshire ten days before I was born. So I can't really claim to be a true Londoner. We went to High Wycombe but came back to London in 1944. So I have a distinct memory of standing in my back garden, with my parents, watching a doodlebug go over. And my other memory of the war was, I was on an underground train going towards West Hampstead and a bomb dropped on the line and we had to get out and walk along the line. Of course, as a child, you have no sense of fear. This was all, you know, part of life.

Adventure.

And then I guess finally, I can remember asking my parents, after the war was over, would there be any more news on the radio?

[laughs] Your father was a salesman. What did he sell?

He was selling fur coats. It was a family business, his elder brother was the MD, he was the salesman, and his two younger brothers made 'em.

And was based in central London, the East End?

Yeah, very… actually, latterly in the Euston Road, in exactly the same place as I sat many years later in Computer House, for ICL. Rather strange coincidence.

You went to Kensal Rise Primary School in 1947. That was when Turing described Artificial Intelligence in a paper called 'Intelligent Machines', and what did you think of that schooling?

It was slightly traumatic for me, because I went from an infant school, which assumed you would be eight when you went to the primary school, and I transferred to Kensal Rise when I was seven. So I'd missed out the rather vital skill of learning how to write.

Oh.

And I was given a pen and I can remember putting my hand up and the teacher said, you know, what is it? And I said, my pen is broken. And he said, what do you mean? And I said, well, it's got a slit in the middle of the nib, for which I received a caning for being insolent. Those days were rather different in schools. However, I did enjoy my school life, in fact.

You left in '51, a memorable year. The first commercial computer in the world with the LEO, a company which you were going to work in later on, and you went to a grammar school, so you passed your eleven-plus.

Much to everybody's surprise at the time. I came forty, I think forty-one out of forty-three in my primary school, and everybody was amazed. Yeah.

In 1951, well, Whirlwind had been given as a contract to IBM because of its excellent hardware manufacturing, and that really got it into computers, and you were at this grammar school for ten O levels and four A levels until 1958. What was the grammar school like, Rodney?

I enjoyed it very much. It was an unusual school in that it was founded in - fairly recently at that time – 1926 by a strong socialist. He had retired, the headmaster, but the headmaster who replaced him was also very strong. So, for example – and it was

a co-ed school, so quite revolutionary in the way it worked - and I enjoyed my life there immensely, actually.

[00:05:28]

You were good at sports?

Yes. And in fact, my really chosen sport was athletics. I was a bit unlucky because I was in what was then known as the County of Middlesex, and although – I was a sprinter – and with the times I was achieving, in any other county in England I would have represented my county in the National Games. Unfortunately, there were three others in Middlesex better than me. Including one at my school, incidentally.

You were also an actor?

Yes. I had a sister who was lauded – older sister, six years older – who was good at everything and I was determined I would do everything she did, only better. So I developed a life-long love of the theatre, both initially acting at school and then in latter years as a strong supporter of various theatres.

You did four A levels, classic four: physics, chemistry, pure maths, applied maths. What drew you to those science subjects?

I think it was just my ability. One of the amazing things, when I left the primary school and went to the grammar school, I moved from being forty-one to being top in the class. And particularly with maths. And I can remember as a kid praying when exams came up that they would be very hard so that I would- and I typically got 99 or 100 in exams, and I had a rival and I knew if it was really hard, I'd beat him. So I was drawn basically because I loved mathematics.

What is it about mathematics that you love?

I suppose the thing, looking back in retrospect, the great thing about maths is either you really understand it and have got a talent for it, and you don't have to swot and

spend hours swotting and stuff, you just either can do it or you can't do it. And maths absolutely appealed to me, it was a natural talent, if you like.

You're a very precise man, aren't you, Rodney?

Precise in what way, Richard?

Well, I have your documents here.

Right.

We have a document on you, we have a file on you, which you filled out. And, for instance, we asked for the dates of the year and dates that things happen, and you did it exactly as we said you wanted it to do. Nobody else, in my experience of nearly, of over 100 interviews, has ever done that.

Wow. Okay.

That I can remember.

I take your word for it, Richard. I never thought of myself in quite that way, I must say.

Well, to be a good programmer, you must. You left in 1958 when Ferranti was building the Atlas, a very important machine, and then right at the other end of the scale, Jack Kilby was developing the integrated circuit. '59, you went to University College London. What happened? Did you have a little break?

What happened was, although I was born in 1940, I missed National Service.

Yes.

Because it ended several months, or at least taking new people into National Service, ended earlier in the year. And I met a friend of the family who said he was a

programmer. And I said, what the hell is a programmer, and he explained it, and I said that sounds fun, how do you do it? And he said, well, you write to a company called IBM, which I'd never heard of. And I was taken on by IBM as a temporary vacation student and I worked what effectively now would be called a gap year at 101 Wigmore Street, the Service Bureau.

What computer were you working on?

It was called an IBM 650.

650? Probably a 650A, I would have thought.

You may be right, although I can't remember ever attaching an A to it.

I think the 650 was the same, had been specified for Rolls-Royce.

Oh right.

*But the 650, I think, was a bit of a failure and the 650A came after it, was a success.
It was a plugboard machine, was it not?*

[00:10:14]

You had a plugboard machine attached to it, but of course its main memory was a magnetic drum and when I went back in vacations when I was at university, they'd added, I think it was 32 words of core store, so a major innovation.

[laughs] Absolutely. I laugh, only because that sounds so pathetic, but what a breakthrough it must have been?

It was. Actually, the plugboard was the thing that was essentially a kind of printer attachment and you could program that as well as the computer itself. But the 650 was a genuine, you know, what you would recognise as an electronic computer, except that instead of having a file store, it had this drum which you had to optimise.

Yes. And it was built in Greenock, in IBM's factory in Scotland.

It was, yep.

What language did you program it in?

The language was called SOAPs, which stood for Self-Optimising Assembly Program. But I soon got bored with that and I did a lot of stuff in machine code. Because what, the key to programming a machine like the 650 was to ensure that the next instruction from the one that you'd written previously was in the right place on the drum as it rotated. So I wrote some incredibly complex programs using machine code, which I fear to say, nobody after me even remotely understood what I'd written.

Perhaps you hadn't documented them properly.

Er, documented? What does that mean?

[laughs]

My training was another student who'd arrived three weeks before me. He took me through the programming manual and I found myself writing programs for, amongst others, British Rail.

Now, you then moved in '62 to LEO Computers, why did you move?

Right. In those days we had what was called the milk round, so I was interviewed by about half a dozen computer manufacturers, maybe more. I'd noticed, as I'd gone back to IBM over my vacations, that the people that were successful in IBM were salesmen. Somebody who was a junior salesman when I joined in '58, by '62 was quite senior. And being a rather arrogant maths student, I thought being a salesman was an utterly demeaning occupation and there were these characters from LEO who appeared to know nothing about selling, but seemed to know all about computers. So, and I was particularly impressed with the guy who interviewed me, Frank Land, who

mercifully is still with us, age 95, and was one of the original Lyons team on the original LEO I. So I decided these are the guys who understand about computers, I'll join 'em.

Now, those of you who are reading or listening to this interview and contribution of Rodney's now to this archive should know that he is extensively outlined – well, more than outlined, we're only now outlining – extensively contributed to history on LEO in Leopedia. And I do urge everybody to go and look at that, because together, when you put this interview and contribution and that interview and contribution together, you'll get an extremely good picture of this great pioneer in UK computing, which is what I'm going to call you from now on, Rodney. You're going to be called the great pioneer. And by the way, is there any naval connection to the name Rodney, for your family?

Not as far as I know. I have a Hebrew name which I was given at birth, called Reuven, or Reuben, and I think my parents decided Rodney was the sort of nearest, or starts with the same letter. So no naval connection, I'm afraid, Richard, none at all.

How important is, in the Jewish culture, or the Jewish religion, to you?

I am not an observant Jew, but I feel myself very much culturally and identify as Jewish. And I'm actually married to an Israeli and I have a home in Israel. But I do not, I am very unobservant.

[00:15:10]

You also, I believe, have a stepsister who came from Austria on the last of the Kinder train?

She did. Sadly died in 2018, but she arrived in my family a year before I did, more than a year, and I've always thought of her as my sister and in many ways she brought me up, because my mother, when we were evacuated, was catering at weekends for 20 people who came out of London for respite, so she looked after the baby, who was me. So, very close to her.

And of course, also coming out on the same trains was Steve Shirley.

Indeed, she was. Yeah.

And you would have met her again, I'm sure, in the Worshipful Company?

Yes, I have. I've met Steve Shirley many times.

Now, the irony is, here's Rodney – I'm not going to say snooty little Rodney, I'm just going to say Rodney, the mathematician and programmer – looking down on salespeople, and what happens in LEO? He becomes a salesman.

Right.

How and why?

It was bizarre. We didn't, we weren't called salesmen, by the way, we were called consultants. But my boss sent me on a sales course, run by two gentlemen called Alfred and Harry Tack. And Alfred wrote a book called *1001 Ways to Sell [One Thousand Ways to Increase Your Sales]*. Anyway, I arrived at this course and I was amazed, there were two people from, I think it was the Wolverhampton something or other paper, some car salesmen, you name it, and I was actually taken aback because I discovered that there was a process, a discipline to selling and these characters who came, shall we say, with a much lesser education, background and so on, turned out to be extremely astute and knew a lot about selling. And I became, it's a bit like the conversion on the Road to Damascus, I'm afraid, Richard. I became, I suddenly decided, you know, there's something in this.

They should have called you Paul, not Rodney.

Right.

So, you became an area sales manager while still at LEO?

No, whilst I was at… well, yes. If you count LEO as English Electric LEO, yes, that is true.

Right. What was the merger like?

The mergers were – there were several – the mergers were very gory and the final merger of all the major British manufacturers in 1968 with ICT to make ICL was gruesome. I was very lucky, because I was working at that time for a chap called Doug Comish, who died earlier, sorry, early in August age 97. And Doug was my major mentor, I think, in my career, and a wonderful boss to have, and he basically protected the team of people that he'd built up. And I learnt a lot from him. He was a very tough boss, I mean if you made a mess of something, you would know about it, but he would protect you to the ends of the earth from the outside world. He took personal responsibility for everything that went on in his domain, and that's something which I'm really grateful for that lesson. I think it's a very important characteristic of a boss.

You became area sales manager, and what is the management technique of Rodney Hornstein?

I guess the thing that I, I… right, I think there are three things that I learnt. One is, make sure that you select good people and if you make a mistake, rectify it fast. Secondly, give your team or members of your team very clear terms of reference of what they need to do. And thirdly, don't interfere, let 'em get on with it. And just encourage them to come to you for advice if they need it, and to be very frank and honest in reporting what they're doing.

[00:20:07]

Are you a good butcher? Can you butcher jobs and people?

I have, unfortunately, over my career been in situations where it's demanded redundancies and so forth. And in the end, I decided you have to kind of harden your heart and get on and do it.

The English Electric had its range of machines called KDF, because I think it was from Kidsgrove, wasn't it?

It was.

But I've never quite understood why they were called KDF until the penny dropped recently, oh, yes. They had a factory in Kidsgrove.

Right. I'm sure that has to be the reason.

And then Marconi was added to it, becoming English Electric LEO Marconi.

Yeah.

Again, he was shielding you from all of this, was he?

Basically, yes. We just got on with our jobs, although when the final merger happened with ICL, I ended up not working for Doug, first time for, yeah, first time in my career actually, I'd more or less worked for him all the time until then.

Did you miss him?

I did, yeah. I had a rather eccentric, actually, I had quite an eccentric new boss who many years later became a very good friend. But quite eccentric and the kind of boss that I made sure he never got near my clients if at all possible.

[laughs] Now, this formation in 1968 of ICT, EELM into ICL, that was also a bloody process, wasn't it? You had been selling, for example, the LEOs, English Electric had the KDFs, English Electric also had the System 4, which was RCA designed as compatible to the IBM 360. ICL had the- ICT had the 20900 series and was planning

a new - the 1900 series, excuse me – and was planning a new range called the 20900. This was chaos.

It was. It was a very, very difficult period. And in fact, before that, looking at it from the sales point of view, we were talking to potential clients and they said, well, what are you going to propose, the 1900 or the System 4? And I can remember one notable occasion, North-Eastern Electricity Board, which I was selling to, where the treasurer, or the finance director as we'd now call 'em, summoned me in and said, Rodney, we've evaluated the proposals and yours has come one and third - because we'd been forced to put in a proposal for each of those machines - which one would you choose? Anyway, probably through bias and a bit of gut feel from having talked around people there, I chose System 4. And he said, I would like confirmation of that from your managing director, so - who at that time was dear old Arthur Humphreys – so I was down in London, first time I'd ever met Arthur Humphreys, and we all sat down and the treasurer from North… came, and he sat down and he gave a long rigmarole about he'd considered both proposals. And then he said to Arthur Humphreys, your team have recommended System 4, is that correct? And he said yes, and we all expected something else, and he said not another word. And I thought, brilliant. And the fellow from North-East Electricity Board said, oh well, fine, then we'll go with that. And Arthur said, good, let's have a drink. [laughs]

What was Humphreys like?

He was, again, one of these characters. He looked like a prizefighter, actually, but incredibly astute and in my experience, had the great skill of being a man of few words. And, you know, and that was to me a prime example, because anything else he added would have detracted from the, what he wanted to say. And I was very impressed with him. I mean it was a really, you know, a character-forming experience, that session. I learnt a lot from it.

[00:25:11]

Later on, about two years later on, four years later on, in comes a completely new broom, with Geoff Cross, ex-UNIVAC, from across the pond, and with a strong

coterie around him. And Cross was in charge for five years from '72 to '77 with the rollout of the 20900 and the choice of having, building a small business computer, 2903, and so on. What was Cross like to work with?

Good question. I did have quite a lot of dealings with him. He was actually quite a difficult man to work with. He… but what he did was to encourage people like me to think in a much more business way about the company itself. Profitability, what you were doing. He introduced what was in those days a very American process of quarterly reviews, which could be a nightmare, where you completely reviewed your forecasts, your business plans and so on. And he taught us a lot, but his weakness – and he was… his weakness was some of the coterie that he brought with him, who some were extremely unpleasant people, very disruptive and in particular, he brought his, I guess you'd call his main product development guy. Very bright individual, almost blind, very capricious.

Ed Mack.

Ed Mack. Yeah.

I understand some of the coterie around Geoff Cross have been described to me as 'real bullies'.

They were. And on one wonderful occasion, perhaps the most unpleasant gentleman that was with us, was very unpleasant to a guy who happened to have a black belt in judo and the gentleman concerned landed up on the floor, very contrite, having been extremely abusive and unpleasant to this individual. It was a wonderful moment, actually. But it was very counterproductive, some of that stuff. Geoff himself was a hard taskmaster, but was never rude, in my experience, and was in many ways… and he was very direct, as perhaps Americans are more than Brits. But it was the people he had around him that were the problem.

Ed Mack particularly, semi-blind, really.

Yeah.

A colleague of mine was telling me about Ed Mack and said really, well, Richard, the thing you need to know about Ed Mack is, he's semi-blind and he hasn't actually read anything new about operating systems and computer architecture for a very long time.

Yeah, good point.

Would that be part of your judgement of him?

Yes, it would. My last job in ICL was as marketing director. And that job involved two things, which I – by the way, the year before, I'd done a project which created this job, which in my view was impossible, I discovered when I was doing it, but half the job was allegedly telling these product development group what to make, that's both software and hardware, and the other half of the job was telling manufacturing what to make. And I can remember, Ed Mack had decided he was going to educate me and I was subjected to endless lengthy conversations that led nowhere, and I received from product development group- I measured, I had two secretaries, and they measured the documents coming in, and they averaged in a week, three to four feet of documentation. There was no way I could look at any of it, of course. And I was constantly faced with, take a decision on this development, and if you don't do it by the end of the week, it'll go back six months. And I could never quite reconcile why my decision making of delaying a week or two would put back a project six months. I think he was on a mission.

[00:30:27]

Well, well he was on some type of mission, but we're not quite sure what. We were just flabbergasted, how many more operating systems can ICL announce, we asked? VEB, VME/A, VME/E.

And then K. The dreaded K.

What was going on?

Well, it's funny you should say that, Richard, because the final straw for me at ICL, it was in that marketing job where I sat in a room with the then managing director, which was Chris Wilson, who succeeded Geoff Cross, most of the senior management, and we were looking at a chart for System K about what was going to be done half day by half day in the following week. And I thought, you know, this is nonsense. You know, this is just complete madhouse. And I have to say, that was a nightmare year and I kind of lost faith and decided that this was trouble, you know, the managing director of the company wasting an afternoon doing that is just not on, it can't work.

During this period of Cross, '72 to '77, the rest of the [incomp 00:13:45] industry was hardly waiting around. We've got the first pocket calculator, we've got Intel launching the 8008, we've got IBM launching DOS for BS [? 00:13:57]. We've got NEC Microcomputer, we've got ethernet developed, 16-bit microprocessors from National Semiconductor, the IBM Winchester drive, etc, etc. And what have we got coming out of ICL but the new range, yes, but then a huge slew of almost incompatible operating system and some very, very dodgy hardware.

Indeed.

But I understand you got a – sorry – what did you say?

No, no, I agree, Richard. Sorry. Yeah.

I understand that during this period, you gained great respect for, yourself, the manufacturing side?

Yes. That was a real education, because I was running, as I say, as marketing director, I got all the inputs from my people about what manufacturing should make, and I sat down with the then manufacturing director, a lovely guy called Pete Murphy, and I can't remember exact numbers, but suppose I said we need 400 magnetic tape decks. And he puffed his pipe and nodded, sort of, and said, yep, okay, I think I'm going to make a hundred. And I was appalled at this. And of course, he was right. And what I learnt was that the people who really understood what was going on was

manufacturing, because they had no degrees of freedom. You know, a salesman, a marketing guy or whatever can come up with whatever numbers he likes, and then he can change his mind next week. Manufacturing have got to decide they are going to make this number of items, and they're stuck with it. And I very much learnt that manufacturing really had their finger on the pulse, and I got to respect their views very much. They were wrong sometimes, but generally, I reckon they were better than the marketing guys in predicting what we were going to need to make for the following period.

But even in this latter period of you being at ICL, was there not a great split in the company between the different manufacturing locations which had been inherited? There was Manchester, there was Stevenage.

Yeah, there was Stevenage. Of course the major one was West Gorton, which was the old, originally the ICT manufacturing. There was still stuff going on in Kidsgrove. It was a tough job, but actually, my experience was, they did what they say they were going to do, generally speaking. They did actually meet their targets.

[00:34:51]

You left in '79 and that was the year of Prestel and the year of System X for BT being developed by GEC Plessey and Ferranti, and the IBM 4300, which really improved price performance immensely and changed the whole platform, I think, of mainframe computing. And you went to English Electric – GEC, sorry – General Electric, and you went to A. B. Dick, not a computer manufacturer.

Yeah. I was basically persuaded to go by Geoff Cross, who had, when he left ICL, acquired A. B. Dick for Arnie Weinstock. And he persuaded me to join them. And as I pointed out to Geoff very quickly, apart from some IBM-like electronic typewriters, it was a very respectable offset printing company. But, I would like- you mentioned the various developments in 1979, but I went into an A. B. Dick office where the financial controller was sitting, in the UK, and he had on his desk a device, and I said, what on earth is that? And it was an Apple II. And I have to confess, I had never

heard of Apple, and we mustn't forget that at that period the Apple II was beginning to appear with a funny program called VisiCalc…

Yes.

… was the predecessor to Excel. And I immediately got one.

A. B. Dick had been bought by GEC, which had been established from AEI and GEC, by Sir Arnold Weinstock. Now, we've come across Arnie before. He built this fabulous successful empire, basically through controlling cost and being a super-accountant.   You as a director of Europe, Middle East and Africa for A. B. Dick presumably had to interface with him. What was it like?

Indeed, very character forming. The problem was, Geoff Cross was based in Chicago and Arnie, bless him, didn't believe in time zones, so he would phone me and ask me questions about A. B. Dick which were not really my business, so that was quite interesting. But the most interesting thing about Arnie was, he drove the business essentially on six ratios, and you as a manager had to know what they were and understand fully what they implied. And I can remember getting a phone call from – and Weinstock insisted on seeing these ratios for all the subsidiaries, so although I was running a subsidiary of a part of A. B. Dick which itself was a subsidiary of Marconi, each of my countries in Europe had to produce these ratios separately. And I received a phone call from Arnie and he said, France, ratio three, what are you doing about it? And there was no… fortunately, he had a colleague at Stanhope Gate, headquarters, who'd briefed me on how to handle him. And you have no excuses or whatever, what he wanted to know was not why things were wrong, but precisely what you were going to do to cure the problem.   And it was a bit of a business school education, actually, because it meant you really had to keep on the ball and understand everything about the businesses you were running. So I had to know why every single country that I was involved in, what ratios were wrong and what was going to happen to correct them.

[00:39:41]

It was, as long as the Ministry of Defence was stuffing its pockets with cost-plus contracts and as long as BT was ordering all that it could from him, Ferranti and Plessey, he was okay, wasn't he?

Yeah.

And as soon as that stopped and he left the business and BT stopped giving him the orders, giving GEC the orders, and also MOD tended to look elsewhere, the whole thing just evaporated, didn't it?

Right. But I don't agree with your analysis, Richard. If you remember, what I would call the great and the good took over.

They did.

And they started making, it was in the time of the dot.com boom, nonsense, whatever you like to call it, they made all kinds of crazy acquisitions, all of which failed, and the 1.5 billion pound cash pile that he'd piled up disappeared, I think, more or less within a year or so, it was extraordinary. So whilst there is some truth in what you say, Richard, the actual demise was due to the hubris of the people that took over.

Good. Fine. I do stand corrected. The thing that I always criticise GEC for was, apart from some very dodgy computers that were put into the old Comets or air traffic control for AWACS, our version of AWACS, they were really into computers, were they?

No, innovation was not his strong point. I will confess that, yes.

Do you think that it was, do you think that if he had remained, then GEC could have survived the loss of the BT contracts?

Good question. I think he had enough nous that he would have taken steps, possibly through well-considered acquisitions, to cure that problem. Because the BT stuff, as you know, was really milking stuff that had been invented thirty years earlier, it was just pure cash cow, the…

I know the senior researcher who later on became senior in BT research, and he said he was in the office being interviewed by Weinstock, and Weinstock picked up a phone and started to shout at one of his managing directors down the phone, and this man said, no, no thank you, goodbye. I'm not going to work here. You left in '81 after two years. Now '81, IBM PC, '81, the BBC Micro, and '81 Japan launched the Fifth Generation Computer programme. Have you any view on the Fifth Generation Computer programme from Japan?

Erm… well, the answer is, at that time I really wasn't terribly aware of what was going on. I only, I left A. B. Dick because I was headhunted to go to Gestetner, which was a long way from computerie, and it was only when I was approached by a bunch of venture capital organisations to take over a project, a spin-out from ICL that I really became aware again of supercomputing.

So you left Gestetner… you left A. B. Dick in '81.

Correct.

You were five years in Gestetner. That was a family-owned company, wasn't it?

It was. Although it was a public company. It was a hundred years old, more or less in the year that I joined them, in '81, yeah.

And it was either you were a Roneo man or you were a Gestetner man, isn't that right?

In a way, yes. It again had made some acquisitions as well, there were some divisions within the company. It was run by two brothers who were fairly incompatible in many ways. It was a- and I joined them at a very difficult time. They'd got Bain in as

consultants. And I don't know whether you've ever been exposed to Bain, but it's like the emperor, it's really the emperor's new clothes. They only talk to the chief executive, basically, they never write a written report, and it's all done with, well, I think it was pre-, it was flipcharts and things in those days. And it was a very difficult time for the company. I took my Apple II there and I really introduced what I think, internationally, I guess the kind of disciplines that Geoff Cross had done in ICL. Proper reviews, and I got all sorts of hairy stories of what was going on in some of the subsidiaries in Gestetner that I alighted on and had to sort out.

[00:45:38]

I was editor of Computing *and we got a tip that Gestetner was thinking of getting into computers and we started to write about it, and I got an extremely stiff letter from some director at Gestetner saying, you have absolutely no right to mention this company at all. I don't want you to write about us at all in the future. And I wrote back a letter saying, you're in the public domain, I'm going to write about whoever I like.*

That is amazing. I was totally unaware of that, Richard, that is lovely. [laughs]

You didn't write that letter, Rodney. [laughs]

I certainly didn't. And I can't imagine, I mean I just wonder who did, actually.

I don't know.

It may well have been the company secretary, actually.

Yes, yes.

Who was a lovely man, and his minutes, he prided himself that his minutes of board meetings seldom extended beyond an A4 sheet of paper.

[laughs] Now, you were headhunted after five years at Gestetner by AMT. And they had, had they bought the rights or inherited the rights, to a very innovative piece of ICL technology, would you believe, called the Distributed Array Processor.

Yeah.

Can you explain that to us?

Yes. Actually, it was a spin-out from ICL. ICL had, actually had two developments which came out of Stevenage and the DAP, the Distributed Array Processor, was one. And as you probably know, Richard, it was what was called a massively parallel processor, i.e. it consisted of a whole set of simple processors working in parallel. It was clear that it was going nowhere within ICL and they approached some people, some consultants, who recommended that they set up an independent company and in the initial manifestation, seven private equity firms invested in this company called AMT. And they were looking for a managing director or CEO, and I was approached to do the job. I'd really decided I wanted to get back into computery and the idea of doing a start-up was extremely attractive to me. So I said yes, and we had a very interesting challenge. From memory, the DAP had, in its ICL manifestation, had about 30 engineers concerned with working on it and developing it, and it cost something like £30-40,000 to manufacture and we needed to redesign it so that it could be manufactured at around $5,000. And we found a little group in southern California of three people: a chip designer; a motherboard, circuit board designer and a project manager. And they contracted for a fixed sum and a fixed timescale of one year, to reengineer the DAP down to being able to manufacture it for $5,000, and they did it. And I was, you know, it was a stunning experience, seeing them work. And it was just a completely different world to what I'd previously experienced. So we- and in fact they were based in Irvine in southern California, so the AMT was partly in Reading where it got originally established, and partly in Irvine. And within the year we actually had the new machine and were marketing it.

[00:50:05]

What to you was the experience of southern California?

I found it really exhilarating. My wife, who was a senior civil servant then, took leave of absence and we went off to southern California. What was amazing to me was the attitude to start-ups. You know, the risks that companies were prepared to take, despite the fact that you were a start-up. You know, you had to get somebody to manufacture the board, you had to get somebody to fabricate the specially designed chips that we did, and the company that manufactured them were actually NCR. And nobody questioned the finances of this start-up UK company. And it was a totally different world and things happened incredibly quickly. Decisions taken quickly. And I think that has been, you know, that was my experience in the end of working in the USA, that people were prepared, much more prepared to take gambles, including trying a new machine.

Who did you sell it to?

We, the machine was ideal for signal and image processing. So we sold the machine in America to a company called E Systems, which I guess is now part of what is now Lockheed Martin. They worked on what were called 'black projects'. And it was, again, an eye-opener to me that if you had a mousetrap that was sufficiently attractive they would, you know, they would just give it a go and use it. We sold it in the UK to, Cheltenham took it.

You mean GCHQ?

GCHQ. Sorry. Who else took… Oh yes, Cancer Re… We were lucky, it was just at the beginning when they were mapping the human genome and Cancer Research UK, or I think it was called Imperial Cancer still in those days, they took a machine, because it was very good, again, in DNA sequencing.

I'll tell you a little story about GCHQ. The Embassy, American Embassy had a fair for new American companies trying to get into Europe and computers were among them, and there was this very new company called Tandem, with NonStop computer.

Yeah.

And I went up onto the booth and I said hello, and there was this very genial American salesman, and I said, have you had any interest? He said, oh yeah, I've got this man from Cheltenham and I'm going down to Cheltenham to see him. I said, oh yes, can I see the card? Oh yes, how very interesting, thank you very much. So, of course, next week, front page of Computing, *GCHQ to buy a Tandem, and they did. They would buy anything, wouldn't they?*

They did. And again, of course… In America, I mean let me give you an extraordinary example. We sold it, when we say sold, an outfit in Washington bought it, we didn't know who they were, we had to deliver it to a warehouse in Washington and they took it away, but the really funny thing to me, was two weeks later they came back to us and said, we really don't know how to program a parallel computer, can you send your guru over. So the guru was a chap in Slough called Stewart Reddaway, who was one of the, he was the software inventor of the DAP, if you will. Uncleared, no security clearances at all, he went to their offices, they met him, you know, at the airport, took him there, spent two weeks teaching them, and then came away and they told him he's got to promise that he mustn't tell anybody what he was doing. And I found that amazing. I mean that was one of the most, quote, secure outfits in America where unless you had security clearances up to heaven, you weren't allowed in, and dear old Stewart strolled in there and spent two weeks with them.

Was the place called Fort Meade?

I never found out.

Oh, you never found out, okay. He kept his word. [laughs]

I think he was scared.

Well, yeah, they do have long arms, don't they? Why did you leave?

[00:55:02]

I, it was mainly personal. I was getting very attracted to staying in California, and my wife said, that's fine, but not with me.

Oh, okay.

So that was the end of the decision. She had a very successful career in the civil service, she was a senior economic adviser. So we moved back to London. And it was quite clear at that stage that the guy running AMT needed to be based in America. I tried it for a bit, but you know, you had to be at the breakfast meetings, you had to be absorbing everything that was going on there, and you couldn't do it remotely, not a small company like AMT.

Did you turn a profit?

No, we didn't. No. It was, it kind of washed its face. But of course towards the end, the world of massively parallel was disappearing, and the dear old PC was – I know it sounds crazy – was taking over, because if you remember there were these projects where thousands of PCs around the world were all being combined to work on various problems.

And you could also have many hundreds of workstations which were incredibly powerful.

Yeah, there was a direct competitor called Thinking Machines, with a couple of Nobel Prize Winners on the board, funded by DARPA, partly, and they in the end failed.

When you left in '89 there were in the world 40,000 mainframes, five million minicomputers, 87 million microcomputers, and in that year Plessey in the UK was gobbled up and carved up by GEC and Siemens. You came back and you got, or were headhunted, or looked for the job at Alphameric. What was it? Headhunted?

Yeah, sort of. Robb Wilmot, who had been the managing director of ICL, and had been the driving force to getting them involved with and ultimately taken over by Fujitsu, approached me to run Alphameric. He'd been given, he'd got a consultancy assignment to help rescue them, because they'd run into severe, having been extremely successful in the early eighties, had made a number of unwise acquisitions and were going broke.

What was the company?

Sorry?

What was the company?

I think…

What did they do?

I think he called himself Octopus or…

Sorry, what did Alphameric do?

Alphameric, okay, had two- well, its principal original business was keyboards. It was a keyboard manufacturer. But it also had got into what we now know as fintech. So it had had software system used by banks and similar organisations. So those were the two, but it had also acquired two or three other peripheral businesses, which were disasters actually.

You were nine years there.

Yeah.

And you left Irvine, California, southern California for Woking and Shalford.

[both laughing]

Culture, big culture shock, actually, Richard.

That's the Shalford outside Guildford, is it?

It is, yeah.

It's a nice neck of the woods, but it's not Irvine.

No, it isn't. Or Newport Beach, where I lived when I worked at Irvine.

How did you restructure the company?

We had to do a complete – well, the first thing we had to do was to get refinanced. So I worked with the Alphameric stockbrokers and we did a huge rights issue and then we had the money to start restructuring the company. My wife did warn me, because we're now talking the beginnings of 1990, that we were about to go into a terrible recession, the worst that I will have seen, and that I'd better be careful. And of course, I patted her on the head and said, you know, can't be that bad, and of course it was. And it was a fairly desperate time, trying to restructure at that moment, and in fact, we had to draw on what were called standby facilities from the then Midland Bank, which itself, if you recall, Richard, was in serious financial difficulty as well. The Midland Bank disappeared.

[01:00:42]

South America.

Yeah.

It had been really extended itself in South America, had it not?

It had. And I still remember that, I learnt very fast that standby facility meant that it was notionally there when you were raising money from the City, from shareholders

to get equity, but when you actually needed it, it wasn't there any more. And I'll never forget, I had a meeting just before Christmas with the manager at Midland Bank who looked after problematic companies, and I said, the payroll cheque is in the system, are you going to honour it? I never got an answer, but I then in the Sunday newspaper saw that this poor guy was being vilified because he was apparently about to pull the rug on Tottenham Hotspur, or it was alleged that he was. Anyway, the cheque went through and it worked. So the restructuring, to answer your question, was really to get rid of and close down the businesses that really weren't functioning, and to focus on what really worked. And perhaps the biggest task was to sell the business, the fintech business, which we did to British Telecom. And that was the key to the survival of Alphameric. BT bought it, it gave us a significant further cash cushion. I then developed the keyboard into what we now know as point-of-sale terminals and we developed a very nice point-of-sale business. And we got into the satellite communication business, which meant putting satellite, eventually, satellite terminals into betting shops around the UK. So we really shifted the whole business away from the multitude of things it was doing into keyboards, point-of-sale, which was directly related to keyboards, and the, let's call it the bookmaking business.

Did you get shares?

I did. Robb was originally, one of his associates was originally the chairman, they ran into trouble at another company, so he went off, and dear old Alan Benjamin, who you no doubt will remember?

Yeah.

Lovely man. Alan became my chairman. Yeah. And we, yeah, we sorted it out and it was, you know, quite a nice business.

This archive started, unfortunately, after Alan died, but I did have the honour and pleasure of interviewing his son, who did, in the early stages of his adulthood, have exactly the same kind of moustache as his father.

Yes.

You remember Alan's David Niven moustache?

Right, yes.

I do. Very good. Now, tell me about Wilmot. Let's roll that back a little bit. He came in in '81, I think, to ICL. Chris Laidlaw was – Sir Christophor Laidlaw, excuse me – was the chairman, he was brought in from Texas Instruments.

Yes.

He was, it was said of the man that if you told him he had hurt your feelings he would go into his office, open his dictionary and look up the word 'feelings' in it. Is that what he was like?

[01:05:00]

Yes, it was like talking to a computer. You know, normally you phone somebody and you say, how are you, and they would say fine, or whatever. Well, none of that with Robb. You know, it was like the computer didn't understand what the question meant. He was extraordinary. I also, I'm not sure we've perhaps put this on record, I think I have the honour of being the only person who actually fired him.

Oh. For what?

Well, Alan had become chairman and Robb was living in California and Alan said he felt it was useful to have him on the board, so we used to pay, I think it was business, it may even have been first class, to come four times a year to give us his wisdom. And at board meetings he would be – as I gather he did at ICL – writing his notes, but made very little contribution. So at the end of the year I said to Alan, you know, I don't think this is good value for money. So Alan said, well, anyway, I said, leave it to me. So I phoned Robb and said, Robb, this isn't working. What do you mean? Don't feel you're making the kind of contribution we hoped. And that was it. Put the phone down and no further conversation has taken place really since.

Alan Benjamin, one, I don't think he got the knighthood he deserved, but he didn't get the knighthood he deserved.

He got an OBE, didn't he?

Yes, I know, but it's not the real thing, is it? Although he was very proud of it, I understand. Incredibly charming man, very, very good on personal relationships, very enthusiastic about new technology, what was he like really as a chairman?

Incredibly supportive, and to me, Alan, if you think of premier league networker, Alan was premier league. And Alan saw it his job to make introductions that he thought would be beneficial to the company and was lovely sort of guide… He never interfered in the, if you like, the politics of the company, but did for me what I think – and I hope I did when I was later a chairman – was act as a safe sounding board to me as a chief executive. I knew I could say anything to Alan, it would stay with him and if I asked his advice he would give it, if he detected all I wanted to do was talk to somebody and, you know, talk through an issue, he would listen, nod and be, you know, generally helpful murmurings on the other side of the table. So I found him a… And he was also, of course, very persuasive. He made me join the Worshipful Company of Information Technologists, which as you probably know, he was a founder member. And he made me go to the London Philharmonic, I think it is, at the Barbican. [laughs] So…

In your resumé of your career you've written that from about 1995 you joined the Worshipful Company of Information Technologists and I've made a mark in my biro beside it, 'Why?' I now know why, because of Alan Benjamin.

Exactly.

1990. Well, one bad thing and one good thing in 1990. The very, very, very bad thing was that a group of – I'm not going to use this term because it's going to be recorded – a group of people were installing a very bad computer system called Horizon, as you know.

Ah. Yeah, yeah.

A very good thing is that nothing fell over in Y2K. What was your view of Y2K? Was it, as some have said, a very cunning ploy by consultants to get very, very rich, or was it an essential thing which saved the whole world from catastrophe?

Well, I don't know the answer. I suspect at the end of the day, it was a bit like a vaccination programme. I think it was necessary. There was undoubtedly some unjustified hype, but I came to the conclusion in the end that a lot of the work that was done was valid and it would have been seriously problematic had it not been done. But I think on balance I felt that was the case.

[01:10:19]

Did you have to make quite an effort at Alphameric?

Some, not greatly. Er… it was actually at the end of that decade that I got more, I actually got more involved with it, because I got involved with a software testing company. I became chairman of a software testing company where we were very much engaged in modifying systems for Y2K. It didn't really impact a great deal at Alphameric, to be fair.

Right. Now, has antisemitism affected your career, or have you been personally affected by it in this industry?

Sorry, I didn't catch what you said there, Richard.

Has antisemitism affected your career, or has it affected you personally?

I think I'm lucky, Richard. I am not conscious of overt, of being adversely affected by overt antisemitism. I think I'm lucky, because I know others who were. But, you know, I suffered it a bit as a kid. But in my adult working life I can honestly say that I

don't think it was ever a factor, for which I'm very grateful and I think I'm very lucky.

What are you most proud of having done in your career?

I think in, most proud is in my latter career, in my activity as a business angel investor. Because I've seen, I've seen some really talented people, through a bit of help from me, achieve great things. The other thing that I suppose over my career is having seen a number of people that worked for me, I feel I actively promoted their careers and they've done extremely well.

Can you mention some?

Pardon?

Can you mention some?

Yes, I suppose my most notable success was Peter Gershon.

Oh yes?

Peter was a regional systems manager for me, and I can remember in the ICL appraisal system, you had to write down everything from useless to no foreseeable end to the level to which they could reach. And I very early on spotted Peter and developed him and put, he's definitely a number five man, and I think that is vindicated by his later career.

You've helped these angels… as an angel investor, but we get an awful lot of minnows, an awful lot of sand and small pebbles, but we really don't get big boulders, we aren't able to build big boulders like the Googles, like the Oracles, why not?

Well, I think firstly, the American, the sheer scale of the USA as a market to start a company is extraordinary. I mean, as you know, Richard, there are hundreds of companies in the US that would be mega-companies in the UK that are medium-sized

companies in the USA. The other thing, of which I've also been guilty, I think, is we tend to take profits earlier. You know, I can think of where we've sold companies, including to American companies, when I guess there is an argument that said we should have gone on and tried to build them to be much bigger, but we took the opportunity of selling them.

And also, in my experience, the stuff the Americans sell us is mostly rubbish, isn't it?

[01:14:51]

Yes. [laughs] That's true, although, as you know, there is a notable case reverberating of an American acquisition where they're claiming that all was not entirely, shall I use the word kosher?

Yeah, you may use that word. That may well be used in a court in California as well, by Hewlett Packard's lawyers. And I have interviewed that man, and he told me, it'll all go away. Well, it hasn't.

Right.

He's in jail. What's your biggest mistake and what have you learnt from it?

Right. I knew you were going to ask me that.

[laughs]

[pause] I'm finding it very difficult to answer. I think in a way, in retrospect, I shouldn't have left the industry when I did. I was tempted to do it, I didn't entirely think that I was leaving it, but I was and I think if I'd have stayed in the industry I would have developed quite a bit faster and might have got into being a business angel and developing new companies much earlier. I think that probably was a mistake, although I did learn a lot from a general management point of view. But I think that was probably the mistake. But my whole, I must say, my whole attitude in my career has always been to look forward. I've never looked back and said, oh if…

it's only, you know, I was contemplating a bit that you'd probably ask that question, that I tried to think about, you know, what was a mistake in my career. And that, I think, bit of a weedy one, I think, Richard.

No, no, no, quite understandable. Among the companies that you're an angel for and have been an angel for, are there any in AI?

Yes. The one which I am currently a majority shareholder, it's called Aerogility, but it's not the AI that we're currently talking about, it is based on what is called agent software, and it is a highly intelligent way of modelling complex situations. Our biggest customers are Rolls-Royce and Lockheed Martin, and a number of the airlines, and it enables, let's say, take Lockheed, it enables them to model the life of a fighter jet over 30 years and it enables fleet controllers day-to-day controlling a fleet of aircraft to manage those aircraft.

And its name again is?

Aerogility.

How do you spell it?

A-E-R-O-G-I-L-I-T-Y.

You see, you can write after all, can't you? [laughs]

We've got a couple of mentors. Jenkins, who's a prof – I forget where he's a prof now, and adviser to the government. He's been a big AI man over the years. Not the current kind of AI that we're talking about. And a prof in London. The whole point about Aerogility's approach is it isn't a black box. The guy using Aerogility can run hundreds of scenarios about what might happen and he can understand the results. The way the results are presented, he can apply, if you like, human judgement to the results. Most modelling systems are black boxes, they come up with an answer and no idea why they've done it. And that's why it is reckoned to be a serious manifestation of AI.

[01:19:56]

And what is your views on the current massive debate about the current AI?

I'm quite scared about it actually, because what it's doing is forever… I mean it's going to sort of eat itself up, because you're going to get lots of false stuff generated by this AI stuff, and then get regurgitated again as if it's true. I have a, I have a daughter who is a researcher, consultant neurologist in Oregon. She tried to use it, she said it produced a very plausible paper, it gave a number of references that were invented, completely, you know, untrue references, including one or two of her own incorrectly quoted. And this was using ChatGPT. I fear it's got lots of real potential and as with all human inventions, the potential to cause a lot of harm if it's misused.

Do I see a chink in your optimism?

You do. And I'm trying to stop my phone from ringing.

It's alright, don't worry, we're near the end.

I meant to turn it off, and I'm going to turn it off now. It was in my earphones, so you probably couldn't hear it.

No, I couldn't hear it. Yes, so there's something about your optimism which is beginning to fade?

It is a bit. I mean, in some ways I've admitted to people that the IT industry is delivering things that I'm ashamed to say, we promised in 1965 and 1966. I'll put my hand up, I'm guilty. Because, as you know, there's in principle nothing that a computer can't do, but I fear that AI is a genie out of the bottle. Maybe it's my age, Richard, let's put it down to my age and decrepitude.

Rodney, that was a fantastic experience for me. I hope it was good for you. It stands up beside your wonderful contribution you made to Leopedia, and people should see

them both, read them both, see them both, they're two pillars upon which you stand and you stand honourably. Thank you for your contribution, Rodney Hornstein.

Thank you, Richard. I really enjoyed meeting you, I don't know why we haven't met over the years in the past, but we've made up for it. I really enjoyed the session. Thank you, thanks for your preparation, Richard.

[end of recording]